## WATER IN BASEMENT PREVENTION PROGRAM PLAN

#### I. Introduction

The Water in Basement ("WIB") Prevention Program is the component of the Metropolitan Sewer District of Greater Cincinnati's ("MSD") WIB Program designed to preclude the occurrence of building backups. Subject to the requirements of this Plan, eligible property owners whose property experiences the backup of wastewater into buildings due to inadequate capacity in MSD's Sewer System (both the combined and the sanitary portions) can receive, at no cost to the property owner, the installation of systems or devices to prevent the backup of wastewater in the future. The Prevention Program is not intended to address water in buildings caused by: 1) overland flooding not emanating from MSD's Sewer System; or 2) blockages in lateral or public sewer lines. Blockages, whether in lateral or public sewer lines, generally are temporary conditions that are better addressed by rodding and other measures that are less permanent than the systems and devices offered by this Plan.

This WIB Prevention Plan will become effective on January 1, 2004. MSD will provide WIB Prevention services to eligible buildings in a manner that is as expeditious as practicable. It is important to recognize that the speed with which MSD can implement the Prevention Program will be affected by a "ramp-up" time at the outset of this effort as MSD refines the logistics of this Program. Preliminary estimates indicate that more than 1000 properties (an amount that is less than 1% of the total connections to the system), may be eligible for this Program, but until the Program is implemented, MSD will not know for certain.

#### II. **Public Notification regarding WIB Prevention Program**

MSD will notify the public regarding the key elements of the WIB Prevention Program in the various public notices issued regarding the WIB Customer Service Program under Section II of the WIB Customer Service Program Plan attached as Exhibit 7 to the Consent Decree. The information provided will include a brief description of the Prevention Program, information about eligibility for the Program, and contact information about participation in the Program.

#### III. **Program Initiation**

There are two ways for properties to become part of the WIB Prevention Program.

First, MSD, on its own initiative, will contact property owners who, in the last five years, have experienced multiple backups of wastewater in buildings on their property as a result of inadequate capacity in MSD's Sewer System. MSD will identify the properties to be contacted by a review of its database of WIB complaints. MSD will contact property owners on a prioritized "worst first" basis.

Second, property owners wishing to explore participation in the WIB Prevention Program can call MSD to review their eligibility for the Program by calling (513) 352-4900. MSD will begin to investigate the eligibility of property owners making such requests within 30 days of the owner's call.

## IV. Program Eligibility

The following guidelines will govern the eligibility of properties for participation in the WIB Prevention Program.

#### A. Type of WIBs Covered:

- The WIB Prevention Program only applies to buildings that have experienced the backup of wastewater due to inadequate capacity in MSD's sewer system or relative local hydraulic gradient.
- ► The WIB Prevention Program does not apply to building backups caused by:
  - overland flooding not emanating from MSD's Sewer System;
  - blockages in lateral or public sewer lines.

Blockages, whether in lateral or public sewer lines, generally are temporary conditions that are better addressed by rodding and other measures that are less permanent than the systems and devices offered by this Program.

- **B.** Frequency of WIBs Covered: The WIB Prevention Program will apply to buildings that have suffered multiple reported capacity-related building back-ups in the five years immediately preceding the assessment of that building's eligibility.
- C. Assessment of Eligibility: MSD will exercise its good faith reasonable engineering judgment to determine whether a property has suffered capacity-related building backups such that it is eligible for the Program. This determination will be based on a consideration of a variety of factors, which can include:
  - property WIB history;
  - condition of sewer system in neighborhood;
  - results of a visual inspection of the neighborhood to look for signs of overland flooding;
  - neighborhood WIB history;
  - capacity of nearby public sewer lines; and
  - topography.

Depending on the circumstances, the determination may also be based on an inspection of the private lateral and/or inspection of nearby public lines.

#### D. Owner Permission

- ► The owner of a property applying for the WIB Prevention Program will be required to give MSD written permission and approval to install building backup prevention devices on the property.
- The owner of a property applying for the WIB Prevention Program will also be required to execute an access agreement that allows MSD and its contractors to enter the property to assess the viability of, design and install backup prevention devices.

If property owners refuse to grant MSD access to their property in connection with the WIB Prevention Program or refuse the installation of backup prevention equipment proposed by MSD based on MSD's good faith engineering judgment and an assessment conducted in accordance with Sections IV.C and V of this Plan, and subsequently experience a building backup, such refusal may be considered a failure to undertake reasonable mitigation measures under the WIB Claims Program set out in Exhibit 8 to the Consent Decree.

#### **Inflow Prevention:** In connection with the installation of backup prevention measures Ε. under the Program:

- properties in sanitary-only service areas must remove downspouts and storm connections from the sanitary sewer lateral completely; and
- properties in combined service areas must reroute downspouts to the discharge side of the device or system installed under this Program.

#### V. **Prioritization of Program Candidates**

Every building and every backup situation is different. Accordingly, the solution to every backup situation will be different. MSD will exercise its good faith reasonable engineering judgment to prioritize candidate properties within the Prevention Program. MSD will provide WIB Prevention services to eligible buildings in a manner that is as expeditious as practicable. It is important to recognize that the speed with which MSD can implement the Prevention Program will be affected by a "ramp-up" time at the outset of this effort as MSD refines the logistics of this Program. Prioritization determinations will be based on an assessment comprised of a variety of components, which can include:

- review of the MSD WIB database for information about backup history at the subject property and the surrounding area;
- field investigations, potentially including inspection of the private lateral and/or inspection of nearby public lines;
- consideration of simple engineering practices, such as backflow prevention devices;
- collection of information on properties in the area affected by the backups;
- interviews with property residents and/or the property owner;
- consideration of potential for and timing of proposed sewer system capacity capital improvements in the area; and
- consideration of the complexity of the WIB prevention methodology identified by MSD.

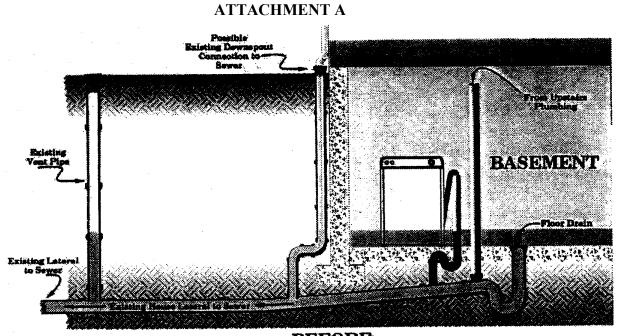
#### VI. **Building Backup Prevention Solutions**

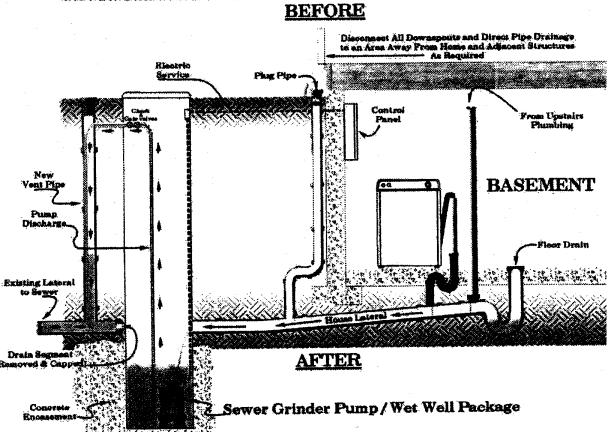
Under the WIB Prevention Program, MSD will undertake to purchase and install, at its own cost, a variety of technologies designed to prevent future basement backups at eligible properties arising from inadequate capacity in MSD's Sewer System. Since no two buildings or building backup situations are the same, there is no single approach to preventing building backups. MSD will exercise its reasonable good faith engineering judgment to determine the appropriate approach to building backup prevention at any particular property. This determination will be based on consideration of the various factors described in the assessments set out in Sections IV and V above, as well as consideration of the building backup technologies available on the market.

It is anticipated that the number of technologies available to MSD to address building backups will expand and change over time. MSD will consider technologies currently available at the time it performs its analysis of a particular property and select the technology that will be the most appropriate level of protection to the building backup at issue.

The technologies to be offered under this program will include backflow preventers and pumping systems. The particular technology offered at any property will depend on the assessment discussed above.

- **A. Backflow Preventers:** MSD will purchase and install, at its own cost, backflow preventers in buildings where it is determined, in MSD's reasonable engineering judgment that backflow preventers are the appropriate solution to an eligible building backup situation. A backflow preventer is a mechanical device, installed in the lateral line, either inside the building or between the building and the main sewer that prevents water in the sewer from backing up into the building.
- **B.** Pumping Systems: MSD will purchase and install, at its own cost, pumping systems in buildings where it is determined, in MSD's reasonable engineering judgment, that pumping systems are the appropriate solution to an eligible building backup situation. In general, a pumping system is installed in the lateral line and separates a building interior from the mainline sewer. In doing so, the building is isolated from the main line sewer. The wastewater generated inside the building is pumped into the mainline by the use of a motorized pump to convey wastewater into the Sewer System. Examples of the general types of pumping systems that will be offered in the WIB Prevention Program are shown in Attachment A to this Plan. The precise type and model pump to be installed will depend on MSD's reasonable good faith engineering judgment regarding the circumstances at an individual building.
- **C. Property Purchase:** As a last resort and where a property owner is amenable, MSD will consider the purchase of properties where no feasible cost-effective alternative exists to a building backup situation. MSD does not intend for property purchases to be the remedy at a significant portion of the properties serviced by this Program.
- **D.** New Technologies: As discussed above, it is anticipated that the number of technologies available to MSD to address building backups will expand and change over time. As such, MSD believes that technologies, systems and devices in addition to those discussed above will be offered in the future under this Plan. MSD will consider technologies currently available at the time it performs its analysis of a particular property and select the technology that will be the most appropriate level of protection to the building backup at issue.

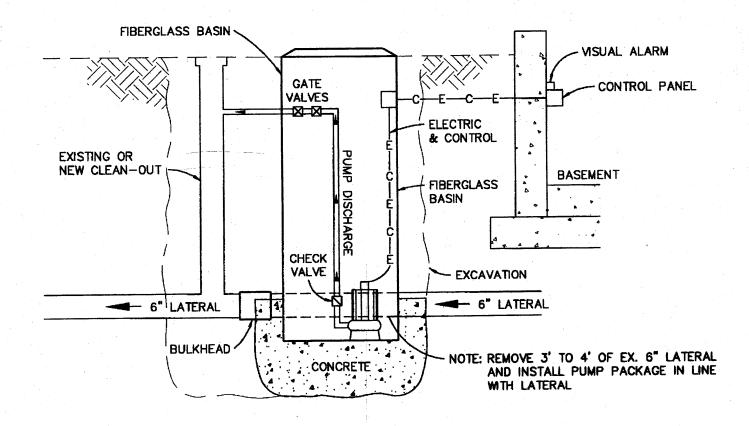




TYPICAL SEPARATE PLUMBING / GRINDER PUMP OUTSIDE INSTALLATION

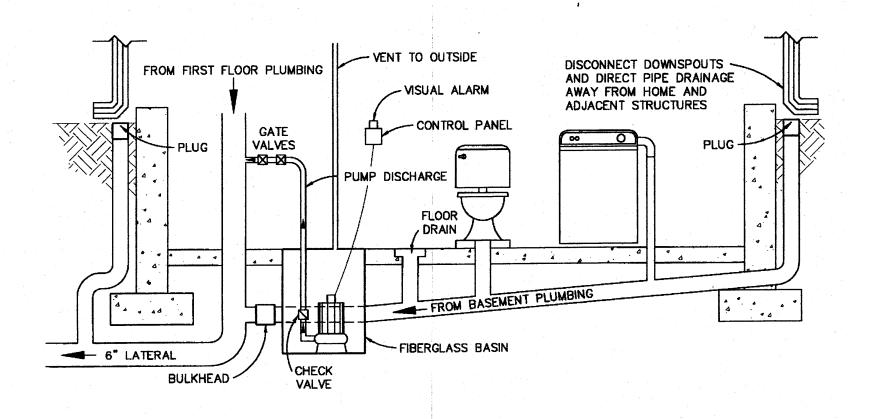
### **ATTACHMENT A**

# TYPICAL EXTERIOR GRINDER PUMP INSTALLATION



### **ATTACHMENT A**

## TYPICAL INTERIOR GRINDER PUMP INSTALLATION



### **ATTACHMENT A**

# TYPICAL INTERIOR NON-CLOG SEWAGE PUMP INSTALLATION

